

NEWFOUND LAKE LEVEL MANAGEMENT

FAQ's – February 2019

Background

The NH Dam Bureau is conducting a lake level investigation at Newfound Lake as per the requirements of RSA 482:79, based on a petition submitted by 38 shorefront property owners on April 10, 2018. This process began in July 2017 when several North Shore landowners contacted environmental scientist, Dr. Rick Van de Poll, to study the apparent erosion concerns at Hebron Town Beach, Cummings Beach, and associated areas. Dr. Van de Poll had conducted an extensive natural resources inventory of the NLRA's Grey Rocks property as well as the town's Bean Sanctuary and was familiar with the area.

Based on field evidence gathered in the fall of 2017, as well as a review of historical maps and photographs of Newfound Lake, Dr. Van de Poll convened a meeting of various stakeholders on February 7, 2018. This meeting included the following stakeholder groups:

- NH DES Dam Bureau
- NH DES Wetlands Bureau
- NH Fish & Game
- Eagle Creek Renewable Energy (Newfound Hydro)
- Town of Bristol
- Town of Hebron
- Town of Bridgewater
- West Shore Marine
- Bristol Shores
- Camp Greenwood
- NH Audubon Society
- Newfound lake Region Association

At this meeting the history of Newfound Lake dam management was reviewed and a slide presentation shown that illustrated several lake concerns, notably beach erosion and infilling at the deltas of the Cocker mouth and Fowler Rivers. (See: <https://newfoundlake.org/lake-level/>). After the meeting, members of this group reached out to various town boards and landowners and a petition was signed and submitted to the Dam Bureau. This petition initiated a lake level investigation by the NH Dam Bureau as stipulated in RSA 482:79.

Since that time, site specific data has been gathered by Dr. Van de Poll to better understand erosion and infilling issues. Historic photos were reviewed, a tour of the

dam structure was completed, a shoreline tour of the entire lake was conducted (thanks to West Shore Marine), the entire Newfound Lake file was reviewed at NHDES, and grade stakes and benthic profiles were established along the North Shore. Instantaneous and historic lake levels at the dam were also carefully monitored, as can be viewed at:

https://www4.des.state.nh.us/Rti_home/station_information_display.asp?WID=pemibaker&ID=NFLNH&NAME=Newfound+Lake&FULLPOND=Full+Lake+=+6+ft.+Local+=+587.88+ft.+above+sea+level

On July 10, 2018 a presentation about erosion concerns was presented by Dr. Van de Poll at the NH Audubon's Red Barn Lecture Series in Hebron. NH Dam Bureau representatives attended the program and answered questions from the 70+ attendees. The first official lake-wide hearing relative to the petition was sponsored by NH Dam Bureau on August 27, 2018. Over 110 people attended the program at the Bridgewater Town Hall. At that meeting an "interim lake level management plan" was submitted by Dr. Van de Poll and was commented on and generally supported by those in attendance.

This plan was formally submitted in writing on September 4, 2018, and posted on the NLRA web site (<https://newfoundlake.org/lake-level/>) along with both the July Red Barn and August hearing slide shows. This interim plan proposal was reviewed by NH Dam Bureau personnel during the fall, wherein they sought feedback from NH Fish & Game. As a result of their review, they then modified the low water winter target to 3.5 feet to protect the spawning beds for round whitefish. The other aspects of the proposal were upheld, namely,

- ❖ **Drop the summer (June 1st) target by .5 feet to 5.5 feet on the gauge**
- ❖ **Gradually lower the lake level beginning on Labor Day and ending on Columbus day to ~~3.0~~ 3.5 feet on the gauge**
- ❖ **Hold this level until March 30th, whereupon the level can be gradually increased until June 1st**
- ❖ **To the extent practicable, hold each level to at or below the target, not above**
- ❖ **Seek to increase pre-storm releases to accommodate for rapid inflows**

At present the NH Dam Bureau is continuing to reach out to other stakeholders, including both lake users and shorefront owners. The informational hearing at the Bristol Town Library on February 26, 2019 was the first of several that are planned for 2019 as they begin to adhere to the interim lake level management plan. In the meanwhile, ongoing outreach efforts are underway by the Newfound Lake Region Association and other interested parties. Careful monitoring of shoreline changes and benthic profiles of the major tributaries will also continue through the year.

FAQ's

What is the Natural Mean High Water for Newfound Lake?

The gauge at the Newfound Lake Dam was initially set near mean low water at an elevation of 579.64 feet. Currently it measures lake level based on the natural mean high water of **581.88 feet** in elevation, which reads **2.24 feet on the gauge**.

What is the “full pond” elevation of Newfound Lake?

“Full pond lies at **589.12 feet**, which is the upper limit of the state’s flowage rights, which they took over in 1974 from Public Service Company of NH. This elevation is **7.24 feet** on the gauge.

If I’m a shorefront owner, how much land do I own?

Around most of the lake, the state’s public trust ownership ends at natural mean high water, or 2.24 feet on the gauge. Above that, private (or other public) land ownership takes over, although the state still retains the flowage rights up to full pond elevation.

How different is the “Interim Lake Level Management Plan” from the existing one?

In general, it differs by .5 feet (six inches). The summer target level of 6.0 feet on the gauge will be lowered to 5.5 feet, and the winter target of 3.5 feet will be lowered at a much faster rate. Instead of gradually lowering the level from the Columbus Day target of 4.5 feet to the March 1st target of 3.5 feet, the winter target will be achieved by Columbus Day. This will actually result in slightly higher, late summer levels, but a more rapid drawdown in the fall.

Doesn’t boat traffic cause most of the erosion on the lake?

No. Boat wakes may exacerbate wave action in the summer, particularly during times of calm water, however they cause far less erosive action on the lakeshore than the variable, sustained winds. This has been particularly evident during the spring and fall when boat traffic is minimal yet storms are more frequent and powerful.

Why lower the lake levels so quickly in late summer when boating is still taking place?

September and October storms have been more severe and more frequent in the last decade and a half, with an average of two storms exceeding 4 inches of precipitation each fall. Since **a one inch of run-off can raise the level of the lake 14 inches**, a four-inch rainstorm in the fall, when run-off potential is higher, can raise the lake level well above full pond elevation and result in tremendous shoreline damage.

Why do I see shallow water with weeds where I never used to see any?

Both the Cockermouth and Fowler Rivers, as well as many of the two dozen or so perennial streams feeding into Newfound Lake have amassed huge amounts of sediment at their mouths. Whereas the lower lake levels before 1977 allowed for sand and debris to be deposited well off shore; higher lake levels have resulted in less current energy where these streams enter the lake. These sediments typically carry ample amounts of organic nutrients that feed and promote aquatic bed growth. Whereas these sediments were once deposited well below the photic zone, they are now being deposited in areas with ample sunshine and warmth to sustain submerged and emergent aquatic vegetation.

Are there other causes of erosion that lake levels effect?

Yes. Higher water levels have changed the way inshore currents move sediment around. For example, instead of having inflowing stream currents move out into the lake more directly, higher lake levels have allowed these currents to change and deposit sands and silts in new patterns. The two largest inflow rivers, the Cockermouth and Fowler, show a dramatic shift in sand deposition based on historical aerial photographs.

Will the interim lake levels stop erosion and aquatic bed growth?

This is the primary purpose of the interim lake level management action, that is, to try to reduce or eliminate these concerns. During 2019, several measurements will be taken by concerned citizens to monitor the successes (or failures) of the effects of this lake level change. Whereas higher lake levels have been the 'norm' for over 35 years, a noticeable reduction in erosive forces and aquatic bed growth will likely take several years to accomplish.

How will the state be involved in testing whether or not this approach works?

The NH Dam Bureau intends to hold at least one hearing again in the summer and one in the fall to receive feedback from residents about how this new lake level management is affecting their safe and variable use of the lake. Specific feedback will be welcomed from boat owners, dock owners, anglers, beach-goers, swimmers, and other recreationists in order to make a representative and informed decision by the end of the year. By January 1, 2020, the state will then either a) maintain the new lake levels as an interim strategy, b) consider even more changes to the elevation and timing of the lake level changes, or c) revert to the previous operation standard that has been in place since 1982. The state will also be taking data from Dr. Van de Poll and others who will be actively monitoring the changes in erosion and aquatic bed growth around the lake.

If you would like more information about the interim lake level management plan, or would like to volunteer to help with the lake surveys, please contact:

The Newfound lake Region Association

If you would like to submit testimony about the interim lake level management plan, please contact:

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